

## Revision of *Elaphropeza* Macquart from Guangdong, China (Diptera, Hybotidae, Tachydromiinae)

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**Revision of *Elaphropeza* Macquart from Guangdong, China (Diptera, Hybotidae, Tachydromiinae).** - *Elaphropeza* Macquart is reported for the first time from Guangdong province in Southern China with three species. They are *E. guiensis* (Yang & Yang) and two species new to science: *E. chebalingensis* sp. n. and *E. plumata* sp. n. A key to the three species is presented.

**Keywords:** Hybotidae - Tachydromiinae - *Elaphropeza* - Guangdong - new species.

### INTRODUCTION

*Elaphropeza* Macquart belongs to the subfamily Tachydromiinae (Diptera, Hybotidae). Its status is controversial: Some authors consider the taxon as subgenus of *Drapetis* Meigen (Chvála, 1975; Chvála & Kovalev, 1989; Beuk & van der Goot, 2002), others as independent genus (Merz *et al.*, 1998; Raffone, 2003). *Drapetis* and *Elaphropeza* share many characters, like the indistinct gena, the first basal cell distinctly shorter than the second one, and the long Rs. They are separated by the presence of anterodorsal setae on the hind tibia in *Elaphropeza* which are usually yellow whereas species of *Drapetis* are black without anterodorsal setae on hind tibia. The genus is distributed worldwide with 42 known species from the Oriental realm (Smith, 1975), 17 from the Australasian and Oceanian Regions (Smith, 1989), and 4 from Europe (Chvála, 2004). Yang & Gaimari (2005) recorded 27 species from Chinese mainland, summarized the available literature and provided a key to all species. Some other major references dealing with *Elaphropeza* in the Palaearctic and Oriental



Regions are Bezzi (1904), Brunetti (1920), Melander (1927), Quate (1960), Smith (1965), Chvála (1975) and Yang & Gaimari (2005).

Guangdong belongs to Southern China and is part of the Oriental realm with a tropical and subtropical climate. During recent field work the first three species of *Elaphropeza* could be found in this province. Two species are new to science, whereas a third species was originally described from Guizhou in the Southwestern part of China. A key to the species of *Elaphropeza* from Guangdong is presented.

## MATERIAL AND METHODS

The specimens on which this study is based are deposited in the following collections:

CAU Insect collection of China Agricultural University, Beijing, China.

MHNG Muséum d'histoire naturelle, Genève, Switzerland.

Terminology of morphological structures follows McAlpine (1981) and Steyskal & Knutson (1981). The following abbreviations are used: acr-acrostichial, ad-anterodorsal, av-anteroventral, dc-dorsocentral, h-humeral, npl-notopleural, oc-ocellar, pd-posterodorsal, psa-postalar, pv-posteroventral, sa-supra-alar, sc-scutellar, vt-vertical.

## KEY TO SPECIES OF *ELAPHROPEZA* FROM GUANGDONG

- 1 Arista short pubescent, diameter at base less than half as thick as diameter of tip of pedicel; mesonotum with one pair of black spots between base of wing and line of *dc* ..... 2
- Arista long plumose, diameter at base distinctly more than half as thick as diameter of tip of pedicel; mesonotum with 3-4 black spots, in addition to the pair of small black lateral spots also with a large unpaired or a pair of smaller spots anterior of the scutellum ..... *plumata* sp. n.
- 2 Femora entirely yellow; hind tibia with 1 *ad* ..... *chebalingensis* sp. n.
- Femora yellow, but at least apical quarter brown to dark brown; hind tibia with 2 *ad* ..... *guiensis* (Yang & Yang, 1989)

## DESCRIPTIONS OF THE SPECIES

### *Elaphropeza chebalingensis* sp. n.

Figs 1-5

**MATERIAL:** Holotype male, Guangdong: Shixing, Chebaling National Nature Reserve, 10 July 2003, Xingyue Liu (CAU).

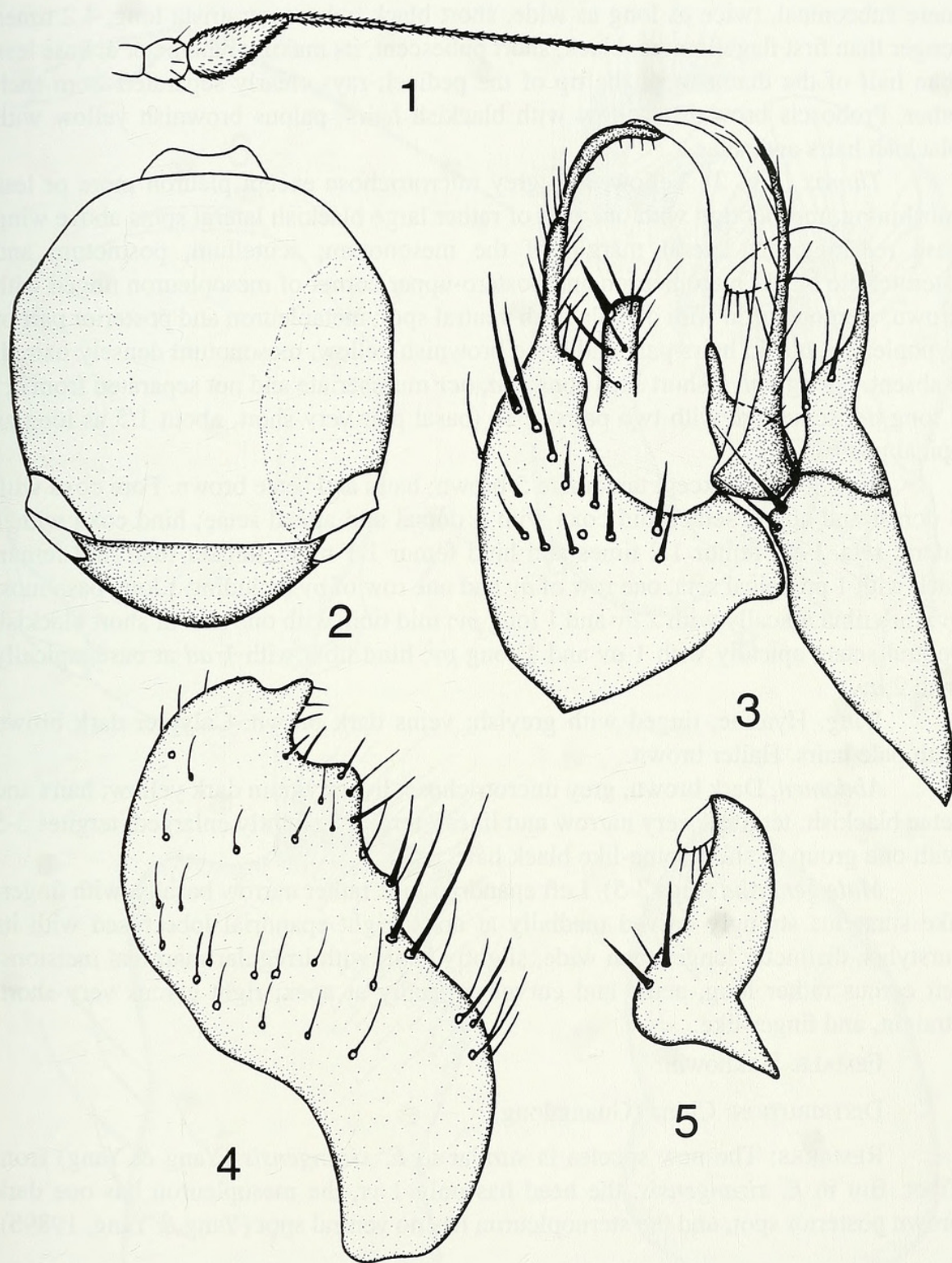
**ETYMOLOGY:** The species is named after the type locality Chebaling.

**DIAGNOSIS:** Antenna dark brownish yellow with blackish first flagellomere; the latter subconical, twice as long as wide; arista at base distinctly less thick than half the diameter of tip of the pedicel. Mesonotum with one pair of rather large black spots on level of wing base. Hind tibia with 1 *ad* at base.

**DESCRIPTION:** MALE. Body length 2.0 mm, wing length 1.9 mm.

**Head.** Black, grey microtrichose, but subshining posterior compound eye and on vertex; hairs pale and setae brownish yellow; eyes contiguous on face; ocellar





FIGS 1-5

*Elaphropeza chebalingensis* sp. n., male. 1, antenna, lateral view. 2, pronotum, mesonotum and scutellum, dorsal view. 3, genitalia, dorsal view. 4, right epandrial lobe. 5, left surstylus.

tubercle with 2 long, strong *oc* and 4 short posterior hairs; 2 pairs of long *vt* curved medially. Antenna (Fig. 1) dark brownish yellow with blackish first flagellomere; scape bare, shorter than pedicel; pedicel with circlet of blackish apical hairs; first flagello-



mere subconical, twice as long as wide, short black pubescent; arista long, 4.2 times longer than first flagellomere, black, short pubescent, its maximal diameter at base less than half of the diameter of the tip of the pedicel; rays clearly separated from each other. Proboscis brownish yellow with blackish hairs; palpus brownish yellow with blackish hairs and setae.

**Thorax** (Fig. 2). Yellow, thin grey microtrichose except pleuron more or less subshining; mesonotum with one pair of rather large blackish lateral spots above wing base reaching the lateral margin of the mesonotum; scutellum, postnotum and laterotergite black; pteropleuron and postero-upper corner of mesopleuron tinged with brown, sternopleuron with one blackish ventral spot; metapleuron and posterior part of hypopleuron black; hairs pale and setae brownish yellow, mesonotum densely haired; *h* absent, 2 long *npl*, 1 short *sa*, 1 long *psa*, *acr* multiseriate and not separated from *dc*, 1 long *dc*; scutellum with two pairs of *sc* (basal pair very short, about 1/5 as long as apical pair).

**Legs**. Yellow, except tarsomere 5 brown; hairs and setae brown. Fore coxa with 8 dorsal and apical setae; mid coxa with 6 dorsal and apical setae; hind coxa with 1 lateral seta. Fore femur 1.2 times and hind femur 1.1 times thicker than mid femur, each with 1 preapical seta, one row of *av* and one row of *pv* including 1 long basalmost *pv*; fore tibia apically with 2 *av* and 1 long *pv*; mid tibia with one row of short blackish ventral setae, apically with 1 *av* and 1 long *pv*; hind tibia with 1 *ad* at base, apically with 2 *av*.

**Wing**. Hyaline, tinged with greyish; veins dark brown. Calypter dark brown with pale hairs. Halter brown.

**Abdomen**. Dark brown, grey microtrichose; hypopygium dark yellow; hairs and setae blackish; tergite 1 very narrow and linear, tergite 3 slightly enlarged, tergites 3-5 with one group of short spine-like black hairs.

**Male genitalia** (Figs 3-5). Left epandrial lobe rather narrow basally, with finger-like surstylus strongly curved medially at apex; right epandrial lobe fused with its surstylus, distinctly longer than wide, slightly bent, with irregular marginal incisions; left cercus rather long, acute and curved medially at apex; right cercus very short, straight, and finger-like.

FEMALE. Unknown.

DISTRIBUTION: China (Guangdong).

REMARKS: The new species is similar to *E. xizangensis* (Yang & Yang) from Tibet. But in *E. xizangensis*, the head has only 1 *vt*, the mesopleuron has one dark brown posterior spot, and the sternopleuron has no ventral spot (Yang & Yang, 1989b).

### *Elaphropeza guiensis* (Yang & Yang)

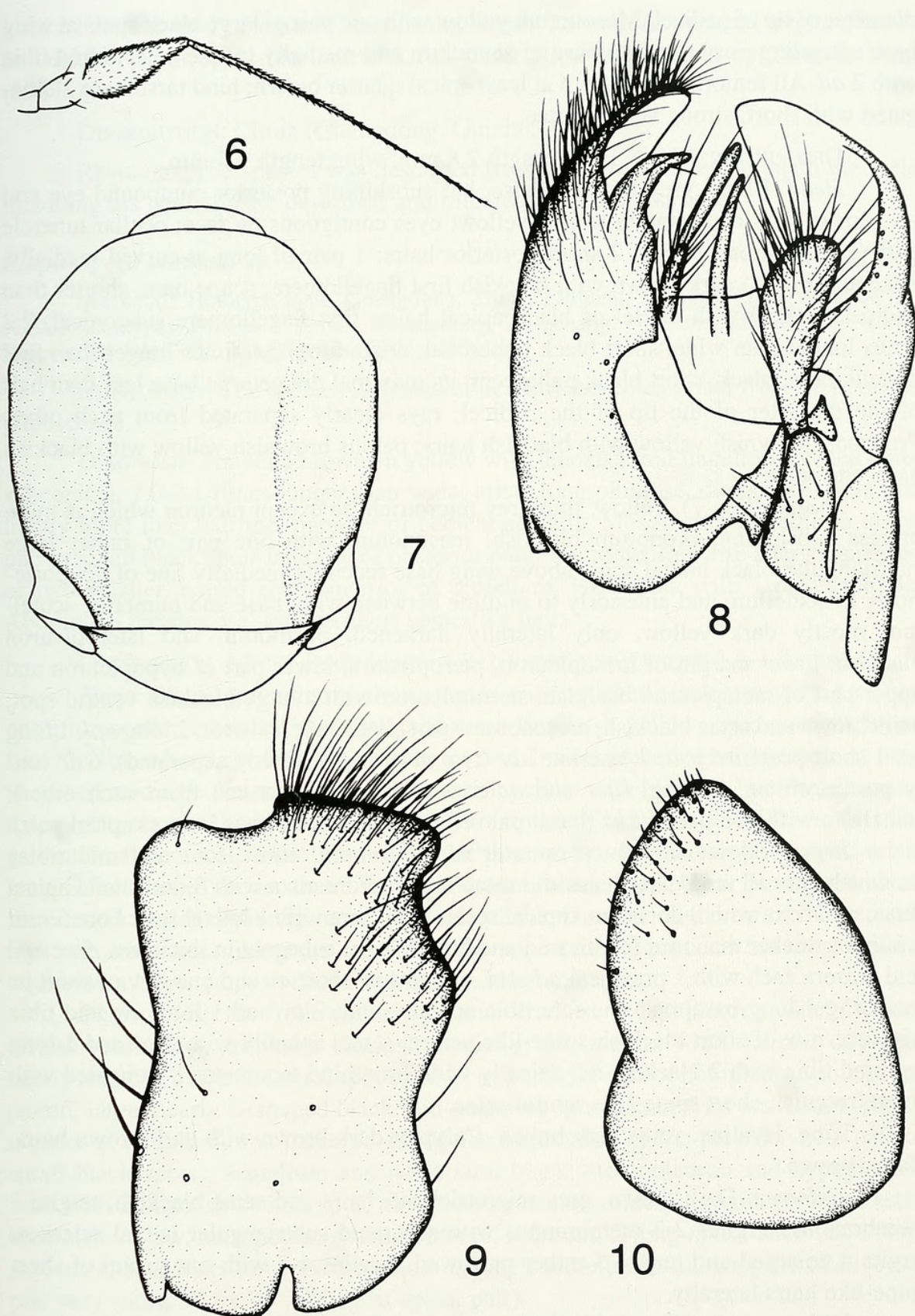
Figs 6-10

*Drapetis* (*Elaphropeza*) *guiensis* Yang & Yang, 1989a: 36. Type locality: Guizhou, Guiyang.

MATERIAL: 1 male, Guangdong, Ruyuan, Nanling National Nature Reserve, 26 March 2003, Lili Zhang (CAU); 1 female, Guangdong, Zengcheng, Nankunshan National Natural Reserve, 14-15 July 2003, Shuwen An (MHNG).

DIAGNOSIS: Antenna dark brown with blackish first flagellomere; the latter subconical, 2.2 times as long as wide; arista at base distinctly less thick than half the





FIGS 6-10

*Elaphropeza guiensis* (Yang & Yang), male. 6, antenna, lateral view. 7, pronotum, mesonotum and scutellum, dorsal view. 8, genitalia, dorsal view. 9, right epandrial lobe. 10, left surstylus.



diameter of tip of pedicel. Mesonotum yellow with one pair of large black spots at wing base extending posteriorly to base of scutellum and medially to line of *dc*. Hind tibia with 2 *ad*. All femora yellow with at least apical quarter brown; hind tarsomere 1 elongated with short, strong ventral setae.

DESCRIPTION: MALE. Body length 2.8 mm, wing length 2.5 mm.

*Head*. Black, grey microtrichose, but subshining posterior compound eye and on vertex; hairs and setae brownish yellow; eyes contiguous on face; ocellar tubercle with 2 long, strong *oc* and 2 short posterior hairs; 1 pair of long *vt* curved medially. Antenna (Fig. 6) dark brown with blackish first flagellomere; scape bare, shorter than pedicel; pedicel with circlet of black apical hairs; first flagellomere subconical, 2.2 times longer than wide, short black pubescent; arista long, 3.6 times longer than first flagellomere, black, short black pubescent, its maximal diameter at base less than half of the diameter of the tip of the pedicel; rays clearly separated from each other. Proboscis brownish yellow with blackish hairs; palpus brownish yellow with blackish hairs and setae.

*Thorax* (Fig. 7). Yellow, thin grey microtrichose except pleuron which is more or less subshining; pronotum blackish; mesonotum with one pair of rather large subtriangular black lateral spots above wing base reaching medially line of *dc*, posteriorly to scutellum and anteriorly to midline between wing base and humerus; scutellum mostly dark yellow, only laterally darkened, postnotum and lateropleuron blackish; lower margin of mesopleuron, pteropleuron, lower part of hypopleuron and upper part of metapleuron blackish, sternopleuron with a large blackish ventral spot; hairs brown and setae blackish, mesonotum sparsely haired; *h* absent, 2 long *npl*, 1 long *sa*, 1 short posterior *psa*, 7 biseriate *acr* (two *acr* rows distinctly separated), 6 *dc* (only posteriormost *dc* long) (*acr* and *dc* rows distinctly separated from each other); scutellum with two pairs of *sc* (basal pair very short, about 1/5 as long as apical pair).

*Legs*. Yellow with apical quarter of all femora, entire fore and mid tibiae brownish, and all tarsi dark; hairs and setae brown. Fore coxa with 8 dorsal and apical setae; mid coxa with 8 dorsal and apical setae; hind coxa with 1 lateral seta. Fore femur 1.1 times thicker than mid femur, mid and hind femora subequal in thickness, fore and mid femora each with 1 preapical *ad* seta, one row of short *av* and one row of short *pv* including 1 long basalmost *pv*; fore tibia apically with 2 *av* and 1 long *pv*; mid tibia with one row of short blackish spine-like ventral setae, apically with 2 *av* and 1 long *pv*; hind tibia with 2 blackish *ad*, apically with 2 *av*; hind tarsomere 1 elongated with some irregular, short spine-like ventral setae.

*Wing*. Hyaline, veins dark brown. Calypter dark brown with dark brown hairs. Halter brown.

*Abdomen*. Dark brown, grey microtrichose; hairs and setae blackish; tergite 1 membranous, tergites 2-3 membranous with separated subtriangular lateral sclerites, tergite 4 enlarged and tergite 5 rather narrowed, tergites 4-5 with one group of short spine-like hairs laterally.

*Male genitalia* (Figs 8-10). Left epandrial lobe rather narrow basally, with subtriangular large surstylus; right epandrial lobe fused with its surstylus, distinctly longer than wide, nearly quadrate, with wide apex; left cercus long and thick with slightly enlarged apex; right cercus short, uniformly thin, and finger-like.



FEMALE: Body length 2.7 mm, wing length 2.5 mm. Abdominal tergite 5 without distinct short spine-like hairs. A full description is provided by Yang & Yang (1989a).

DISTRIBUTION: China (Guangdong, Guizhou).

REMARKS: The species was described from a single female. Herewith the male including his genitalia are described and illustrated for the first time.

*Elaphropeza plumata* sp. n.

Figs 11-15

MATERIAL: Holotype male, Guangdong, Zijing, Linjiang, 1 August 2003, Xingyue Liu (CAU). Paratypes 2 males 1 female, Guangdong, Zengcheng, Nankunshan National Natural Reserve, 14 July 2003, Xingyue Liu (CAU, MHNG).

ETYMOLOGY: The species is named after the rather thick arista with the plumose pubescence.

DIAGNOSIS: Antenna brownish yellow with blackish first flagellomere; the latter subconical, 2.0-2.1 times longer than wide; arista long plumose, diameter at base distinctly more than half the diameter of pedicel apically. Mesonotum in addition to the pair of small black spots laterally of posterior part of notopleuron with a large unpaired or two smaller, paired spots anterior of scutellum. Hind tibia with 1 *ad* at middle. Abdominal tergites 3-5 without short spine-like hairs.

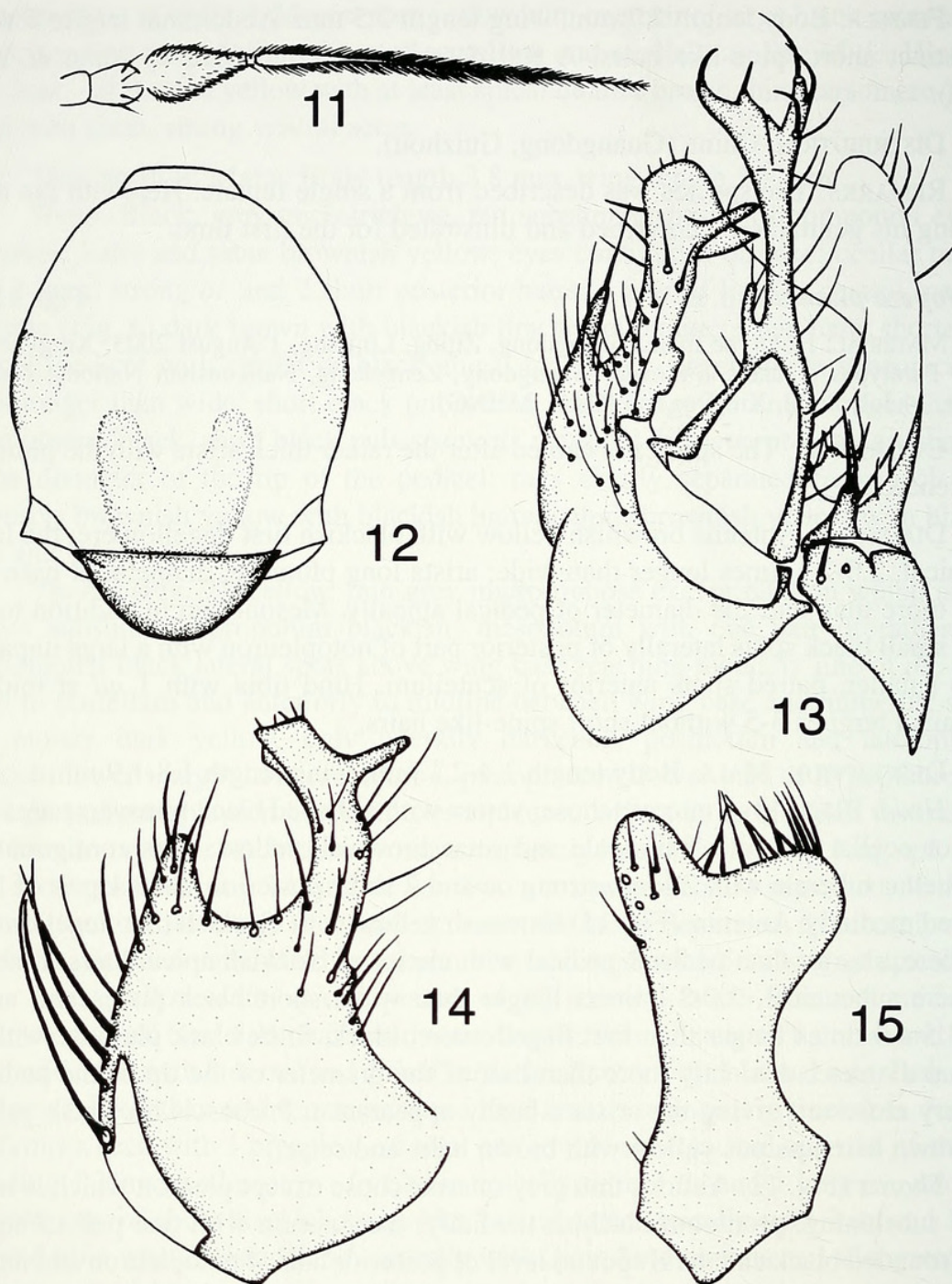
DESCRIPTION: MALE. Body length 1.4-2.1 mm, wing length 1.8-1.9 mm.

*Head.* Black, grey microtrichose; vertex with polished black transverse area just posterior ocellar tubercle; hairs pale and setae brownish yellow; eyes contiguous on face; ocellar tubercle with 2 long, strong *oc* and 2 short posterior hairs; 1 pair of long *vt* curved medially. Antenna (Fig. 11) brownish yellow with blackish first flagellomere; scape bare, shorter than pedicel; pedicel with circlet of blackish apical hairs; first flagellomere subconical, 2.0-2.1 times longer than wide, short black pubescent; arista long, 3.5-4.0 times longer than first flagellomere, black, thick black plumose with its maximal diameter distinctly more than half of the diameter of the tip of the pedicel; rays very close-set, giving the arista a bushy appearance. Proboscis brownish yellow with brown hairs; palpus yellow with brown hairs and setae.

*Thorax* (Fig. 12). Yellow, thin grey microtrichose except pleuron which is more or less subshining; pronotum blackish medially; mesonotum with one pair of small, nearly rounded blackish lateral spot on level of posterior half of notopleuron and an unpaired, large, nearly U-shaped black mid-posterior spot just anterior scutellum (which is paler at middle in one paratype giving the impression of the presence of a pair of small black spots); scutellum and postnotum black; sternopleuron and hypopleuron each with a blackish ventral spot, metapleuron entirely blackish; hairs pale and setae brownish yellow, mesonotum sparsely haired; *h* absent, 2 long *npl*, 1 short *sa*, 1 long *psa*, *acr* absent, 4 *dc* (only posteriormost *dc* long); scutellum with two pairs of *sc* (basal pair very short, about 1/5 as long as apical pair).

*Legs.* Yellow, except tarsomere 5 dark brown; hairs and setae brown. Fore coxa with 8-9 dorsal and apical setae; mid coxa with 6 dorsal and apical setae; hind coxa with 1 lateral seta. Fore and mid femora subequal in thickness, 1.1 times thicker than hind femur, each with 1 preapical *ad* seta, one row of *av* and one row of *pv* including





FIGS 11-15

*Elaphropeza plumata* sp. n., male. 11, antenna, lateral view. 12, pronotum, mesonotum and scutellum, dorsal view. 13, genitalia, dorsal view. 14, right epandrial lobe. 15, left surstylus.

1 long basalmost *pv*; fore tibia apically with 1 *av* and 1 long *pv*; mid tibia with one row of short blackish spine-like ventral setae, apically with 1 *av* and 1 long *pv*; hind tibia with 1 blackish *ad* at middle, apically with 2 *av*.

*Wing.* Hyaline, veins brown. Calypter pale with brown hairs. Halter pale yellow.

*Abdomen.* Brown except tergites 1-5 dark brown, grey microtrichose; hairs and setae blackish; tergite 1 very narrow, tergites 2-3 with mid-anterior incision, tergite 4



enlarged and tergite 5 narrowed particularly at middle; dorsum without short spine-like black spines laterally.

*Male genitalia* (Figs 13-15). Left epandrial lobe rather narrow basally, with large surstylus distinctly incised apically with strong apical setae; right epandrial lobe more or less fused with its surstylus, distinctly longer than wide, deeply incised apically with short conical and long irregular apico-lateral processes, and with long setae on lateral margin; left cercus well developed, rather long, and furcated apically; right cercus absent.

FEMALE: Body length 1.7 mm, wing length 1.8 mm. Morphology as in male.

DISTRIBUTION: China (Guangdong).

REMARKS: The new species is somewhat similar to *E. uralo* (Smith) from Nepal. But in *E. uralo*, the mesonotum has two blackish spots, and the hind tibia has 2 *ad* (Smith, 1965).

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